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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,069	01/16/2004	Robert Keller	79980	1962

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EXAMINER

SMITH, TYRONE W

ART UNIT PAPER NUMBER

2837

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/760,069

Applicant(s)

KELLER ET AL.

Examiner

Tyrone W. Smith

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,6 and 9-13 is/are rejected.
- 7) ☒ Claim(s) 4,7 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### **Claim Rejections - 35 USC § 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 5, 6, 9 and 10 rejected under 35 U.S.C. 102(b) as being anticipated by Fellows et al (5557887).

Regarding Claims 1, 2, 5, 6, and 10. Fellows discloses a barrier movement operator (fig 1) comprising an A.C. motor (fig 7 item 14 and fig 2 item 15) having a rotatable rotor connected to a barrier (col 3 lines 50-55) for movement thereof, sensing apparatus (fig 7 item 108, col 7 lines 65-66) to generate motor signals (the output of the amplifier of fig 7 item 1 10 and col 8 line 1) representing an operational variable of the motor (current drawn; controller (fig 7 item 90) for controlling movement of the barrier by controlling the energization of the motor (with "FWD" and "REV" outputs) and being responsive (reversing direction of motor) to changes in the sensed operational variable (abnormal torque load, which means higher current drawn) represented by the motor signals (col 8 lines 15-17) for changing the energization of the motor wherein (reversing, col 8 lines 6-17), the motor is constructed to exhibit an enhanced operating characteristic (accurate torque load measurement) of sensed operational variable to torque (inefficiency of motor at different operating temperatures of above col 8 lines 6-17 citation is effect of motor construction, enhanced operating characteristic is achieved in pad by taking this into account) to improve (torque load is "more accurately" measured) the rapid detection by the

controller of changes in a rate of movement of the barrier (higher current means a higher torque load, which means an obstruction may be slowing the door) by detecting changes in the operational variable (as set forth above), wherein fig 7 items 90, 102 A and B, 104 A and B, and associated resistors constitute the power control arrangement, and wherein rapid response is the reversing as set forth above.

Regarding Claims 3 and 9. Fellows discloses a barrier movement operator comprising an A.C. motor (fig 7 item 14 and fig 2 item 15) having a rotatable rotor connected to a barrier (col 3 lines 50-55) for movement thereof, sensing apparatus (fig 2 item 22, col 3 lines 57-62) to generate motor signals (that which indicates the frequency of which the slits are detected by the optical sensor of the col 3 lines 57-62 citation) representing an operational variable of the motor (rotational speed; controller (fig 7 item 90).

3. Claims 11-13 rejected under 35 U.S.C. 102(b) as being anticipated by Fitzgibbon et al (6172475).

Regarding Claims 11-13. Fitzgibbon discloses a barrier movement operator comprising: a motor (fig 21 item 118) comprising a rotatable rotor coupled to a barrier (garage door, fig 1 item 24) for movement thereof between open (UP limit, col 16 line 65) and closed (DOWN limit, col 17 line 1) positions', position detecting apparatus (fig 21 item 40, and Hall elect sensors in the RPM module, col 7 line 42) generating position signals (logical true/false, fig 4 item 220, and fig 4 item 224) representing a position of the barrier during movement of the barrier (col 8 lines 1-13, and col 11 lines 36-40), motor speed detecting apparatus to generate motor signals (fig 4 item 224) representing a sensed operational variable (speed) of the motor (Hall effect sensors in the RPM module, col 7 line 42)., a controller (5g 4 item 200) responsive to the position

signals and the motor signals for controlling the motor to reverse a direction of movement (fig 20B item 980) of the barrier during a first range of sensed positions (not beyond the down limit setting, fig 20B) when the sensed operational variable speed of the motor is less than a first amount (fig 20B item 970, the first amount being 40%, in the event when user selects 40%, col 5 lines 11-18) determined by subtracting (100% - 60% = 40%) a first parameter (difference between 100% and user-selected amount) from an expected motor speed (100%) and for reversing the rotation direction of the motor (fig 20D item 1028) during a second range of sensed positions (beyond the down limit setting, fig 20B) when the sensed operational variable of the motor is less than a second amount (fig 20B item 970, the second amount being 20%, in the event when user selects 20%, col 5 lines 1 1-18) determined by subtracting (100% - 80% = 20%) a second parameter (difference between 100% and user-selected amount) from an expected motor speed (100%) (RPM period is motor speed described in time between input Hall effect pulses, and if the measured RPM period is longer than the allowable period then the pulses are created further apart in time from each other than is permissible, meaning that the motor isn't turning quickly enough; and the second parameter is greater than the first parameter (as is apparent above). The second range occurs within 18 inches of the down position, as it occurs beyond the limit setting which extends to the ground, and the same reversing occurs when the door is only 3 inches from the DOWN limit (fig 20C item 988).

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to

a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Fellows et al (5557887).

Regarding Claim 2. Fellows discloses a barrier movement operator (fig 1) comprising an A.C. motor (fig 7 item 14 and fig 2 item 15) having a rotatable rotor connected to a barrier (col 3 lines 50-55) for movement thereof, sensing apparatus (fig 7 item 108, col 7 lines 65-66) to generate motor signals (the output of the amplifier of fig 7 item 110 and col 8 line 1) representing an operational variable of the motor (current drawn; controller (fig 7 item 90) for controlling movement of the barrier by controlling the energization of the motor (with "FWD" and "REV" outputs) and being responsive (reversing direction of motor) to changes in the sensed operational variable (abnormal torque load, which means higher current drawn) represented by the motor signals (col 8 lines 15-17) for changing the energization of the motor wherein (reversing, col 8 lines 6-17), the motor is constructed to exhibit an enhanced operating characteristic (accurate torque load measurement) of sensed operational variable to torque (inefficiency of motor at different operating temperatures of above col 8 lines 6-17 citation is effect of motor construction, enhanced operating characteristic is achieved in part by taking this into account) to improve (torque load is "more accurately" measured) the rapid detection by the controller of changes in a rate of movement of the barrier (higher current means a higher torque load, which means an obstruction may be slowing the door) by detecting changes in the operational variable (as set forth above), wherein fig 7 items 90, 102 A and B, 104 A and B, and associated resistors constitute the power control arrangement, and wherein rapid response is the reversing as set forth above. However, Fellows does not explicitly disclose that the motor is of the induction type, does not explicitly disclose that the rotor contain inductance powered rotor conductors.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to include this limitation. The motivation to do so would have been to provide for some manner in which the rotor may develop a magnetic field so that it may rotate. The above obvious limitations being taken into account, Fellows discloses controlling a conduction resistance of the rotor conductors (via TRIAC OUTPUT of fig 8), and the motor is driven using the TRIACS (col 7 lines 51-54). The driving is necessary to achieve the enhanced characteristic set forth in the rejection of claim 1.

#### **Allowable Subject Matter**

5. Claims 4, 7 and 8 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### **Response to Arguments**

6. Applicant's arguments filed May 25, 2006 have been fully considered but they are not persuasive.

Applicant argues that Fellows does not suggest a motor, which is constructed to exhibit an enhanced characteristic of a sensed operational value, and teaches away from the applicant's motor construction in that it teaches and suggests changes to the micro-controller to compensate for the characteristics of a motor. Further, the Applicant argues that Fellows does not disclose a power control arrangement which provides eternizing power to the motor by receiving AC power input substantially in the form of a sine wave and continuing portions of

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successive cycles of the sine wave of the received AC power to the motor to enhance the sensed operational variable to torque characteristic of the motor. Applicant argues that Fitzgibbon does not disclose a controller responsive to the position signals and the motor signals for controlling the motor to reverse a direction of movement of the barrier during a first range of sensed positions when the sensed operational speed of the motor is less than a first amount determined by subtracting a first parameter from an expected motor speed and for reversing the rotation direction of the motor during a second range of sensed positions when the sensed operational speed of the motor is less than a second amount determined by subtracting a second parameter from an expected motor speed. Examiner takes Applicant's arguments in full consideration.

Examiner rejection is based on the claims as presented. Fellows discloses that the motor is constructed to exhibit an enhanced operating characteristic (accurate torque load measurement) of sensed operational variable (can be operational variable) to torque (inefficiency of motor at different operating temperatures of above col 8 lines 6-17 citation is effect of motor construction, enhanced operating characteristic is achieved in pad by taking this into account) to improve (torque load is "more accurately" measured) the rapid detection by the controller of changes in a rate of movement of the barrier (higher current means a higher torque load, which means an obstruction may be slowing the door) by detecting changes in the operational variable (as set forth above), wherein fig 7 items 90, 102 A and B, 104 A and B, and associated resistors constitute the power control arrangement, and wherein rapid response is the reversing, which is enhancing the characteristics of the sensed operational value. The Applicant has not expounded on how the motor is constructed to exhibit an enhanced characteristic of a sensed operational value to thus improve rapid detection by the controller of



changes in the rate of movement of the barrier by detecting changes in the operational variable.

Explain the current invention against the reference of Fellows.

Fellows teaches a power control arrangement (Figure 7 item 90) which provides energizing power to the motor (Figure 7 item 14) by receiving AC power input substantially in the form of a sine wave (Figure 8) and continuing portions of successive cycles of the sine wave of the received AC power to the motor to enhance the sensed operational variable to torque characteristic of the motor. Examiner believes based on the claims as presented Fellows teaches the present invention.

Further, Fitzgibbons discloses a controller (5g 4 item 200) responsive to the position signals and the motor signals for controlling the motor to reverse a direction of movement (fig 20B item 980) of the barrier during a first range of sensed positions (not beyond the down limit setting, fig 20B) when the sensed operational variable speed of the motor is less than a first amount (fig 20B item 970, the first amount being 40%, in the event when user selects 40%, col 5 lines 11-18) determined by subtracting ( $100\% - 60\% = 40\%$ ) a first parameter (difference between 100% and user-selected amount) from an expected motor speed (100%) and for reversing the rotation direction of the motor (fig 20D item 1028) during a second range of sensed positions (beyond the down limit setting, fig 20B) when the sensed operational variable of the motor is less than a second amount (fig 20B item 970, the second amount being 20%, in the event when user selects 20%, col 5 lines 1 1-18) determined by subtracting ( $100\% - 80\% = 20\%$ ) a second parameter (difference between 100% and user-selected amount) from an expected motor speed (100%) (RPM period is motor speed described in time between input Hall effect pulses, and if the measured RPM period is longer than the allowable period then the pulses are created further apart in time from each other than is permissible, meaning that the motor isn't turning quickly enough; and the second parameter is greater than the first parameter

(as is apparent above). The second range occurs within 18 inches of the down position, as it occurs beyond the limit setting which extends to the ground, and the same reversing occurs when the door is only 3 inches from the DOWN limit (fig 20C item 988).

### **Conclusion**

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

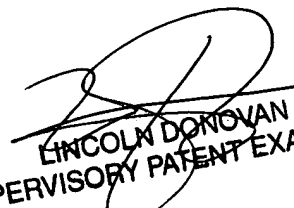
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W. Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan, can be reached on 571-272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith  
Patent Examiner

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LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER